

FORM PTO-1390  
(REV 11-2000)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

72.057

TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

10/031762

INTERNATIONAL APPLICATION NO.  
PCT/EP00/06959INTERNATIONAL FILING DATE  
20 July 2000PRIORITY DATE CLAIMED  
21 July 1999TITLE OF INVENTION *Operating Device Having a Light Detector*

APPLICANT(S) FOR DO/EO/US Michael Steffen

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371 (f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☐ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c)(2))
  - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
  - b. ☒ has been communicated by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371 (c)(2)).
  - a. ☒ is attached hereto.
  - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
  - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
  - b. ☐ have been communicated by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☐ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

**Items 11 to 20 below concern document(s) or information included:**

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording and Appointment of Domestic Representative.
13. ☒ A **FIRST** preliminary amendment.
14. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
15. ☐ A substitute specification.
16. ☐ A change of power of attorney and/or address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 – 1.825.
18. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
20. ☐ Other items or information:

U.S. APPLICATION NO. (if known, see 37 CFR 1.51)

107031762

INTERNATIONAL APPLICATION NO  
PCT/00/06959ATTORNEY'S DOCKET NUMBER  
72.057

- 21.
- ☒
- The following fees are submitted:

**BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :**

Neither international preliminary examination fee (37 CFR 1.482)  
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO  
and International Search Report not prepared by the EPO or JPO ..... \$1040.00

International preliminary examination fee (37 CFR 1.482) not paid to  
USPTO but International Search Report prepared by the EPO or JPO ..... \$890.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO  
but international search fee (37 CFR 1.445 (a)(2)) paid to USPTO ..... \$740.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO  
but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... \$710.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO  
and all claims satisfied provisions of PCT Article 33(1)-(4) ..... \$100.00

**ENTER APPROPRIATE BASIC FEE AMOUNT =****CALCULATIONS PTO USE ONLY**

\$ 890.00

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30  
months from the earliest claimed priority date (37 CFR 1.492(e)).

\$ 0.00

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$
Total claims	4 - 20 =	0	X \$18.00	\$ 0.00
Independent claims	1 - 3 =	0	X \$80.00	\$ 0.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$270.00	\$ 0.00

**TOTAL OF ABOVE CALCULATIONS =**

\$ 0.00

☐ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are  
reduced by 1/2.

\$ 0.00

**SUBTOTAL =**

\$ 890.00

Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30  
months from the earliest claimed priority date (37 CFR 1.49(f)).

\$ 0.00

**TOTAL NATIONAL FEE =**

\$ 890.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be  
accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +

\$ 0.00

**TOTAL FEES ENCLOSED =**

\$ 890.00

Amount to be:  
refunded

\$

charged

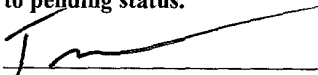
\$

- a. ☒ A check in the amount of \$ 890.00 to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. \_\_\_\_\_ in the amount of \$ \_\_\_\_\_ to cover the above fees.  
A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any  
overpayment to Deposit Account No. 50-1170. A duplicate copy of this sheet is enclosed.
- d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card  
information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

**NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR  
1.137(a) or (b)) must be filed and granted to restore the application to pending status.**

SEND ALL CORRESPONDENCE TO:

Timothy E. Newholm  
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Timothy E. Newholm, Reg. No. 34,400

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

National Phase of PCT/EP00/06959

International Filing Date: 20 July 2000

Inventors: Michael STEFFEN

Title: *Operating Device Having a Light Detector*

Priority: German Application No. 199 34 186.9; filed 21 July 1999 (21.07.99)

PRELIMINARY AMENDMENT

DO/EO/US  
Director of the U.S. Patent  
and Trademark Office  
Washington, D.C. 20231

Sir:

This Preliminary Amendment is directed to a new U.S. application as identified above.

Please enter this Preliminary Amendment prior to calculating the fees.

Please substitute the attached pages 1, 2, 3, and 3a for pages 1-3 of the specification as originally filed. The new pages incorporate revisions to the international PCT application which were modified under Article 34.

Please amend the application as amended as specified above, as follows:

IN THE SPECIFICATION (As Amended to Incorporate the Article 34 Amendments):

Substitute page 1, after the title, insert the heading --BACKGROUND OF THE INVENTION--; and the subheading --1. Field of the Invention--.

Substitute page 1, between lines 2 and 3, insert the subheading --2. Description of the Related Art--.

Substitute page 1, between lines 21 and 22, insert the heading --OBJECTS AND SUMMARY OF THE INVENTION--.

Substitute page 3, between lines 17 and 18, insert the heading --BRIEF DESCRIPTION OF THE DRAWING--.

Substitute page 3, between lines 23 and 24, insert the heading --DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS--.

IN THE CLAIMS:

Before claim 1, between lines 2 and 3, insert --I claim:--

*Please substitute claims 1-7 with amended claims 1-4 as shown below in "clean sheet" format. A marked-up version of the amended claims is attached.*

1. (Twice Amended) A soil compaction device with a guide handle provided with at least one light detector in the area gripped by the hand, said light detector emitting a signal corresponding to the brightness (brightness signal), wherein the light detector is coupled to an evaluation circuit that can evaluate the brightness signal in such a way that when a prescribed brightness threshold is exceeded or is not met, a control signal is sent to a control unit of the soil compaction device, and wherein the brightness threshold can be variably adjusted by the evaluation circuit according to the surrounding conditions by means of a surrounding light detector that is coupled to the evaluation circuit and is provided outside the grip area of the hand to determine the surrounding conditions.

2. (Twice Amended) A soil compaction device according to claim 1, wherein the light detector at the guide handle does not contain a light-emitting element.

3. (Twice Amended) A soil compaction device according to claim 1, wherein the light detector is a photodiode, a phototransistor or a light-sensitive resistor (LDR light-dependent resistor).

4. (Twice Amended) A soil compaction device according to claim 1, wherein a number of light detectors are provided at the guide handle at a minimum of two places in the grip areas of both hands.

ABSTRACT OF THE DISCLOSURE:


Please add page 7 as the Abstract of the Disclosure.

REMARKS

This application has been amended to insert headings in the specification, to eliminate multiple dependencies in the claims and to otherwise place the claims into better conformance with preferred USPTO practice without narrowing the claims, to incorporate Article 34 Amendments from the corresponding PCT application, and to add an Abstract. Entry of the amendments and early consideration and allowance are respectfully requested.

No fees are believed to be payable with the submission of this amendment. However, the Director is authorized to charge any fees associated with this or any other communication, or credit any overpayment, to Deposit Account No. 50-1170.

Respectfully submitted,



Timothy E. Newholm  
Registration No. 34,400

Dated: January 18, 2002

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Attorney Ref.: 72.057

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Amended Claims

Patent claims

I claim:

1. (Twice Amended) A soil compaction device with a guide handle (1) provided with at least one light detector (2) in the area gripped by the hand, said light detector emitting a signal corresponding to the brightness (brightness signal), wherein the light detector (2) is coupled to an evaluation circuit (3) that can evaluate the brightness signal in such a way that when a prescribed brightness threshold is exceeded or is not met, a control signal is sent to a control unit (4) of the soil compaction device, and wherein the brightness threshold can be variably adjusted by the evaluation circuit (3) according to the surrounding conditions by means of a surrounding light detector (5) that is coupled to the evaluation circuit (3) and is provided outside the grip area of the hand to determine the surrounding conditions.
2. (Twice Amended) A soil compaction device according to claim 1, characterized in that wherein the light detector (2) at the guide handle (1) does not contain a light-emitting element.
3. (Twice Amended) A soil compaction device according to claim 1 or 2, characterized in that wherein the light detector (2) is a photodiode, a phototransistor or a light-sensitive resistor (LDR light-dependent resistor).

4. (Twice Amended) A soil compaction device according to ~~one of claims 1 through 3,~~  
~~characterized in that~~wherein a number of light detectors (2) are provided at the guide handle (1)  
at a minimum of two places in the grip areas of both hands.

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### Soil Compaction Device with Light Detectors in the Guide Handle

This invention pertains to a soil compaction device.

5 To control or steer work equipment, all types of guide handles, control levers, safety handles, switches, pushbuttons and the like are used. What is common to most of these control elements is that the operator initiates the desired action through the introduction of force to a control system using his hand. If necessary, other safety elements are provided that the operator must activate, such as pressure handles or the like, so as to guarantee that the operator is holding the work equipment securely, thus preventing danger caused by the work equipment when it malfunctions or  
10 fails to operate. Moreover, there are also tactile, capacitive, ultrasound and infrared sensors that determine the existence or proximity of the hand to the operating element.

The various control devices of this type have different disadvantages: in the case of safety handles, switches or pushbuttons, a moving actuator has to be held by hand, which leads to a tiring of the hand over time. Furthermore, a solid hand grip, which is usually required, can lead to the transmission of vibrations to the hand and arm of the operator. The sensors are partially sensitive to noise or cannot be used when using gloves.

In FR-A-2 674 077, for example, an optical switch control device is described that can adjust to changing surrounding light conditions.

20 In US-A-6,319,250, an equipment guide handle is disclosed that is steered by placing both hands of the operator on the handle in order to guarantee that the hands are located on the handle.

The objective of this invention is to provide a soil compaction device that can reliably determine that a hand is  
25 located at a control element, in particular a guide handle, even with heavy shaking without having to apply any force by hand.

This objective is met according to the invention by a soil compaction device with the features of patent claim 1. Further advantageous developments of the invention can be found in the dependent claims.

According to the invention, a soil compaction device has a guide handle provided with at least one light detector in the area gripped by the hand, said light detector emitting a signal corresponding to the brightness (brightness signal), wherein the light detector is coupled to an evaluation circuit that can evaluate the brightness signal in such a way that when a prescribed brightness threshold is exceeded or is not met, a control signal is sent to a control unit of the device. Also, the brightness threshold can be variably adjusted by the evaluation circuit according to the surrounding conditions, with a surrounding light detector that is coupled to the evaluation circuit being provided outside the grip area of the hand to determine the surrounding conditions.

This type of soil compaction device makes it possible, by merely moving the operator's hand to the vicinity of the control element (guide handle), to change the amount of light incident on the light detector, which then detects the change and reports it to the evaluation circuit. If the operator grips the control element with his hand, the light detector is blacked-out and for the most part separated from the outside brightness given off by the sun or by an artificial light source. By blacking out the light detector, thus changing the brightness signal, it can be reliably determined that a hand has approached the control element.

It is preferred that the light detector operate according to photoelectrical or photo-resistive principles, so that the brightness signal changes in strength when light hits it.

In the process, the light detector contains no light-emitting element, i.e. no additional light source, at the control element, which considerably increases its sensitivity to noise.

As already mentioned, the brightness threshold is variably adjustable by the evaluation circuit depending on the surrounding conditions. For this purpose, the evaluation circuit can be coupled to an additional surrounding light detector that detects the absolute surrounding brightness. When the brightness determined by the light detector at the control element falls below a brightness threshold determined according to the absolute brightness, this can be

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MODIFIED SHEET

interpreted by the evaluation circuit as the approach of a hand to the control element. This prevents influences caused by the surrounding brightness since it can vary greatly (twilight, direct sunlight).

In an especially advantageous embodiment of the invention, a number of light detectors are provided at the control element at a minimum of two points in the grip area for both hands. In this way, the evaluation circuit coupled with the light detectors is able to determine that both hands are on the control element, which is prescribed for certain work equipment for safety reasons.

The soil compaction device is, for example, a tamper, a vibration plate or a vibration roller. Soil compaction devices are subject to severe loads during rough construction site use, resulting in the rapid failure of numerous known control devices, or resulting in the need for considerable design effort. However, the light detectors proposed according to the invention can be well protected from the environment and protected against contamination or destruction by integrating them into the control element.

This and other advantages and features of the invention are explained in more detail below with the help of an example illustrated by the figure.

The single figure shows a schematic plan view of a guide handle 1, which is the control element attached at a point not shown to a soil compaction device to be operated.

There are a number of light detectors 2 attached to the guide handle 1 at points where the operator commonly holds the guide handle 1 with both hands. Suitable as light detectors 2 are light-sensitive elements such as photo diodes, photo transistors, light-sensitive resistors (LDR, light-dependent-resistor) and similar systems that change electrically due to optical excitation.

The light detectors 2 are powered by an evaluation circuit 3, which also evaluates the brightness signals given off by the light detectors 2. In the evaluation circuit 3, the brightness signals are compared to a brightness threshold. Depending on the results of the comparison, i.e. if the prescribed brightness threshold is not met or is exceeded, a

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MODIFIED SHEET

corresponding control signal is sent to a control unit 4 of the soil compaction device. This control signal can, for example, correspond to the signal that is produced when securely holding a conventional safety handle.

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

### Operating Device Having a Light Detector

This invention pertains to a control device to operate a piece of equipment.

To control or steer work equipment, all types of guide handles, control levers, safety handles, switches, pushbuttons and the like are used. What is common to most of these control elements is that the operator initiates the desired  
5 action through the introduction of force to a control system using his hand. If necessary, other safety elements are provided that the operator must activate, such as pressure handles or the like, so as to guarantee that the operator is holding the work equipment securely, thus preventing danger caused by the work equipment when it malfunctions or fails to operate. Moreover, there are also tactile, capacitive, ultrasound and infrared sensors that determine the existence or proximity of the hand to the operating element.

The various control devices of this type have different disadvantages: in the case of safety handles, switches or pushbuttons, a moving actuator has to be held by hand, which leads to a tiring of the hand over time. Furthermore, a solid hand grip, which is usually required, can lead to the transmission of vibrations to the hand and arm of the operator. The sensors are partially sensitive to noise or cannot be used when using gloves.

The objective of this invention is to provide a control device that can reliably determine the existence of a hand at the control element without having to apply any force by hand.

This objective is met according to the invention by a control device with the features of patent claim 1. Further  
20 advantageous developments of the invention can be found in the dependent claims. Moreover, it is particularly useful to make use of the control device as part of a soil compaction device.

According to the invention, a control device to operate a piece of equipment has a control element that is activated by hand and has at least one light detector on the control element in the area gripped by the hand, said light detector  
25

emitting a brightness signal. The light detector is coupled to an evaluation circuit that can evaluate the brightness signal in such a way that when a prescribed brightness threshold is exceeded or is not met, a control signal is sent to a control unit of the device.

5 This arrangement makes it possible, by merely moving the operator's hand to the vicinity of the control element, to change the amount of light incident on the light detector, which then detects the change and reports it to the evaluation circuit. If the operator grips the control element with his hand, the light detector is blacked-out and for the most part separated from the outside brightness given off by the sun or by an artificial light source. By blacking out the light detector, thus changing the brightness signal, it can be reliably determined that a hand has approached the control element.

10 It is preferred that the light detector operate according to photoelectrical or photo-resistive principles, so that the brightness signal changes in strength when light hits it.

15 In the process, the light detector contains no light-emitting element, i.e. no additional light source, at the control element, which considerably increases its noise sensitivity.

20 It is especially advantageous if the brightness threshold is variably adjustable by the evaluation circuit depending on the surrounding conditions. For this purpose, the evaluation circuit can be coupled to an additional surrounding light detector that detects the absolute surrounding brightness. When the brightness determined by the light detector at the control element falls below a brightness threshold determined according to the absolute brightness, this can be interpreted by the evaluation circuit as the approach of a hand to the control element. This prevents influences caused by the surrounding brightness since it can vary greatly (twilight, direct sunlight).

25 In an especially advantageous embodiment of the invention, a number of light detectors are provided at the control element at a minimum of two points in the grip area for both hands. In this way, the evaluation circuit coupled with

the light detectors is able to determine that both hands are on the control element, which is prescribed for certain work equipment for safety reasons.

The control device can be used to particular advantage in a soil compaction device such as a tamper, a vibration plate or a vibration roller. Soil compaction devices are subject to severe loads during rough construction site use, resulting in the rapid failure of numerous known control devices, or resulting in the need for considerable design effort. However, the light detectors proposed according to the invention can be well protected from the environment and protected against contamination or destruction by integrating them into the control element, for example.

This and other advantages and features of the invention are explained in more detail below with the help of an example illustrated by the figure.

The single figure shows a schematic plan view of a guide handle 1, which is the control element attached at a point not shown to a soil compaction device to be operated.

There are a number of light detectors 2 attached to the guide handle 1 at points where the operator commonly holds the guide handle 1 with both hands. Suitable as light detectors 2 are light-sensitive elements such as photo diodes, photo transistors, light-sensitive resistors (LDR, light-dependent-resistor) and similar systems that change electrically due to optical excitation.

The light detectors 2 are powered by an evaluation circuit 3, which also evaluates the brightness signals given off by the light detectors 2. In the evaluation circuit 3, the brightness signals are compared to a brightness threshold. Depending on the results of the comparison, i.e. if the prescribed brightness threshold is not met or is exceeded, a corresponding control signal is sent to a control unit 4 of the soil compaction device. This control signal can, for example, correspond to the signal that is produced when securely holding a conventional safety handle.

If, for example, the evaluation circuit 3 establishes that the majority of the light detectors 2 only recognize a minimal brightness, this indicates that the light detectors 2 are covered by the hands of the operator and are thus blacked-out. This also verifies that the hands of the operator are located at the guide handle 1.

- 5 The light detectors 2 must determine as reliably as possible that the hand of the operator is actually at the guide handle or is gripping it. To this end, it is useful to locate the light detectors 2 at the top and bottom of the guide handle 1 so that they have to be covered both by the ball as well as the fingers of the hand of the operator. Simply placing the hand there is not sufficient to initiate the desired control impulse. Of course, other arrangements of light detectors 2 are possible as a result of ergonomic or safety requirements.

10

The evaluation circuit 3 then sends a signal to the control unit 4 that the soil compaction device may be started.

The brightness threshold in the evaluation circuit 3 can be fixed into memory. However, due to the different environmental conditions in which the equipment can be used, it is useful to adjust the brightness threshold according to the surrounding brightness. To this end, an additional surroundings detector 5 is coupled to the evaluation circuit. The hand of the operator should not grip this additional detector. The surrounding light detector 5 can for example be attached to the top of the soil compaction device. Depending on the surrounding brightness, i.e. whether it is sunshine or twilight, the surrounding light detector 5 sends a base signal on the basis of which the evaluation circuit 3 determines the brightness threshold for the remaining light detectors 2.

20

The surrounding light detector 5 has the further advantage in that it can also recognize when the other light detectors 2 are soiled. If, namely, the light detectors 2 show a lower brightness initially than the surrounding light detector 5, or if all light detectors 2, 5 continuously detect similar brightnesses independent of whether the hand is at the guide



handle 1, the evaluation circuit recognizes that at least a portion of the detectors 2, 5 must be dirty.

Nevertheless, functional impairment due to soiling is improbable since the hand grips the light detectors 2 during operation of the work equipment, which rubs off dust or grime residue.

**Patent Claims**

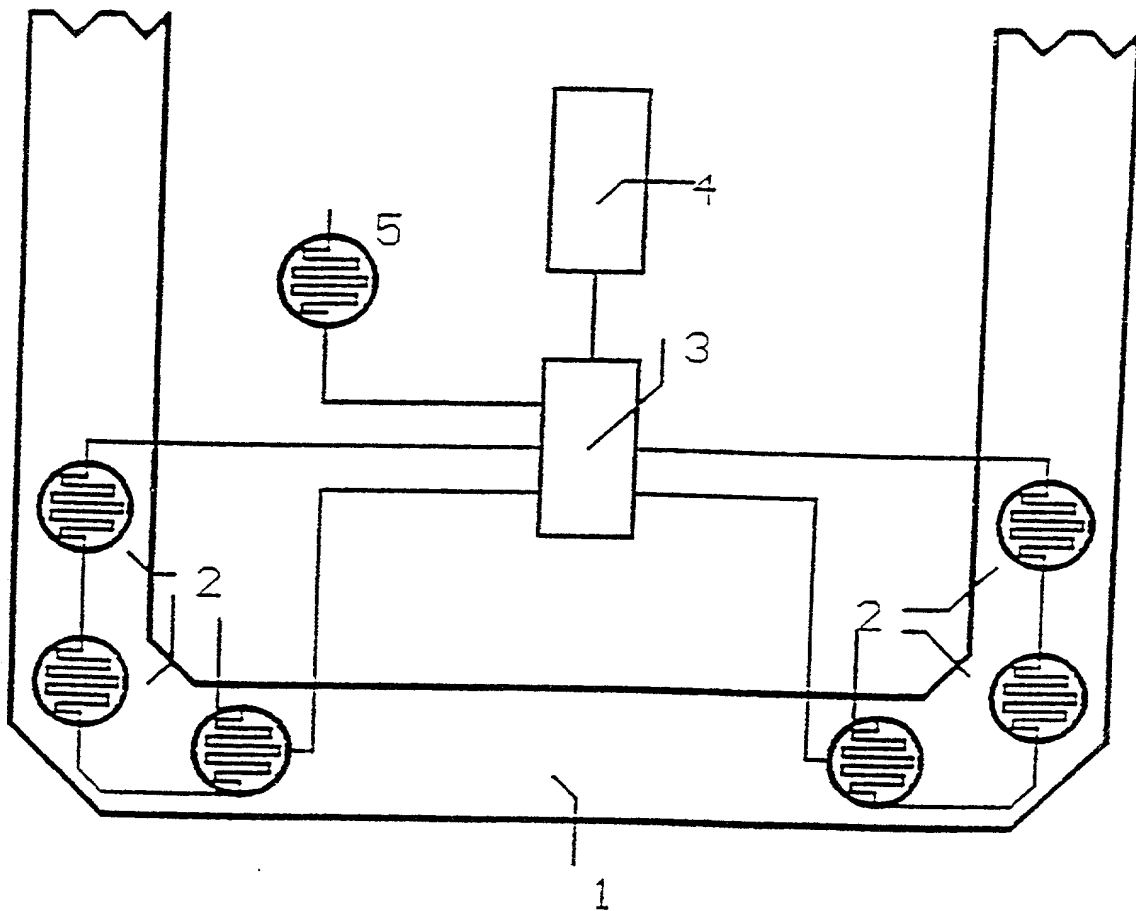
1. A control device to operate a piece of equipment with
  - a control element (1) activated by hand; and with
  - at least one light detector (2) provided at the hand grip that gives off a brightness signal,wherein the light detector (2) is coupled to an evaluation circuit (3) that evaluates the brightness signal in such a way that when it falls short of or exceeds a prescribed brightness threshold, a control signal is sent to a control unit (4) of the equipment.
2. A control device according to claim 1, **characterized in that** the light detector (2) at the control element (1) does not contain a light-emitting element.
3. A control device according to claim 1 or 2, **characterized in that** the brightness threshold can be variably adjusted by the evaluation circuit (3) according to the surrounding conditions.
4. A control device according to claim 3, **characterized in that** to determine the surrounding conditions, a surrounding light detector (5) is provided that is coupled to the evaluation circuit (3).
5. A control device according to one of claims 1 through 4, **characterized in that** the light detector (2) is a photodiode, a phototransistor or a light-sensitive resistor (LDR light-dependent resistor).
6. A control device according to one of claims 1 through 5, **characterized in that** a number of light detectors (2) are provided at the control element (1) at a minimum of two places in the grip areas of both hands.
7. A soil compaction device with a control device according to one of the above claims, **characterized in that** the control element (1) is a guide handle of the soil compaction device.

ABSTRACT

The invention relates to an operating device which is provided for operating an appliance and which comprises a hand-actuated operating part on which at least one light detector is provided in the gripping area of the hand. The light detector and an evaluating circuit make it possible to detect when a hand is approaching the guide handle or when the hand is gripping the same. The evaluating circuit accordingly activates a control device which optionally places the appliance in operation.

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RECEIVED 25 APR 2002

## DECLARATION FOR PATENT APPLICATION

10/031762

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **OPERATING DEVICE HAVING A LIGHT DETECTOR**, which is described and claimed in

- ☒ the attached specification.  
☒ the specification in application 10/031,762, filed on 1/18/2002  
 and amended on \_\_\_\_\_ (if applicable).  
☐ international (PCT) application No. \_\_\_\_\_ filed on \_\_\_\_\_  
 and as amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is known to be material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

## Prior Foreign Application(s)

## Priority Claimed

<u>199 34 186 0</u>	<u>Germany</u>	<u>21 July 1999</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(Number)	(Country)	(Day/Month/Year Filed)	
<u>PCT/EP00/06959</u>	<u>PCT</u>	<u>1 February 2001</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(Number)	(Country)	(Day/Month/Year Filed)	

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is known to be material to the patentability of this application as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior application and the national or PCT International filing date of this application.

_____ (Application Number)	_____ (Filing Date)	_____ (Status - Patented, Pending, Abandoned)
_____ (Application Number)	_____ (Filing Date)	_____ (Status - Patented, Pending, Abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: James P. Boyle, Reg. No. 33,653; Timothy E. Newholm, Reg. No. 34,400; David D. Stein, Reg. No. 40,828; Michael J. Gratz, Reg. No. 39,693; Mary E. Eberle, Reg. No. 43,599; Peter C. Stormma, Reg. No. 36,020; Andrew S. McConnell, Reg. No. 32,272; Mathew E. Carr, Reg. No. 45,434; and Jay G. Durst, Reg. No. 41,723.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor (given name, family name): Michael STEFFEN

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